



HIGHER ED & ECONOMIC DEVELOPMENT

MISSOURI

THE WALL STREET JOURNAL.

10:28 am ET

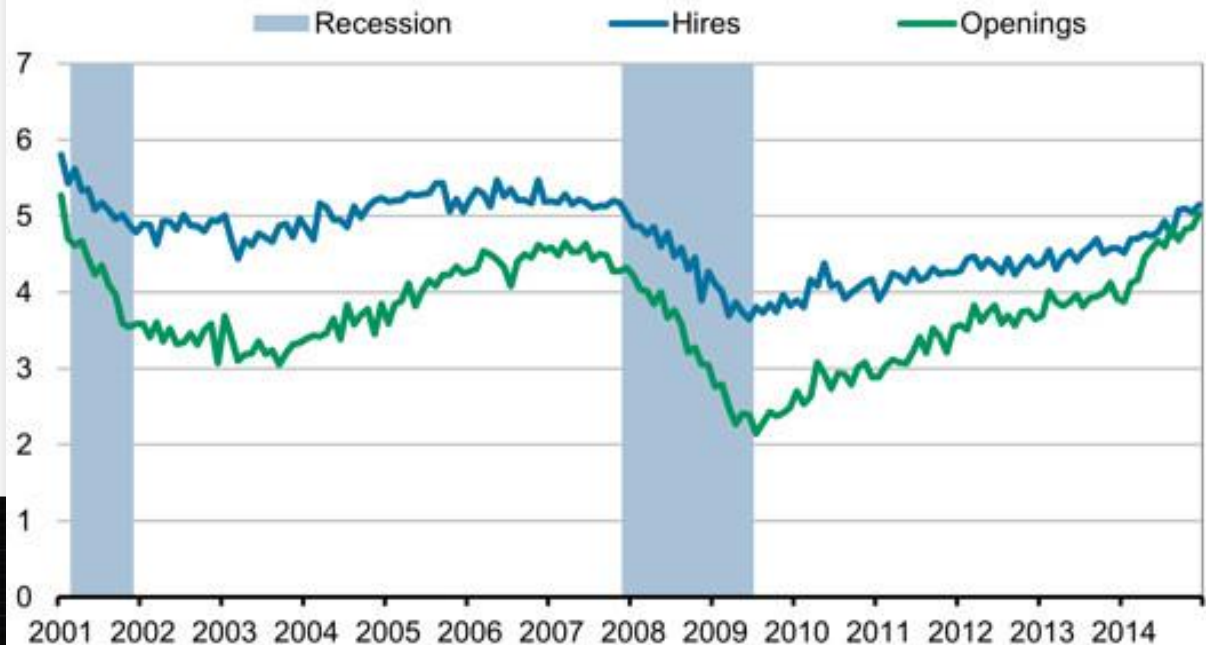
Feb 10, 2015

ECONOMY

Job Openings at 14-Year High as Hiring Returns to Pre-Recession Levels

Job Openings Galore

The monthly level of job openings and hirings (in millions), seasonally adjusted



Source: Department of Labor | WSJ.com

THE WALL STREET JOURNAL.

10:17 am ET
Feb 6, 2015

EMPLOYMENT

Economists React to the January Jobs Report: 'Astonishingly Strong'

Before long, the U.S. economy is going to run into a problem that was unimaginable just six months ago: **we might run out of people to employ."**



“New Economic Development Playbook”



1. Make attracting, developing, and retaining **talented people** in your communities your top ED priority.



“Education is the single most important factor in driving economic growth.”

CEO for Cities

“Technology has been a key driver of economic growth over the last two decades, fueling the innovation and entrepreneurship that are crucial to long-term economic development and prosperity.

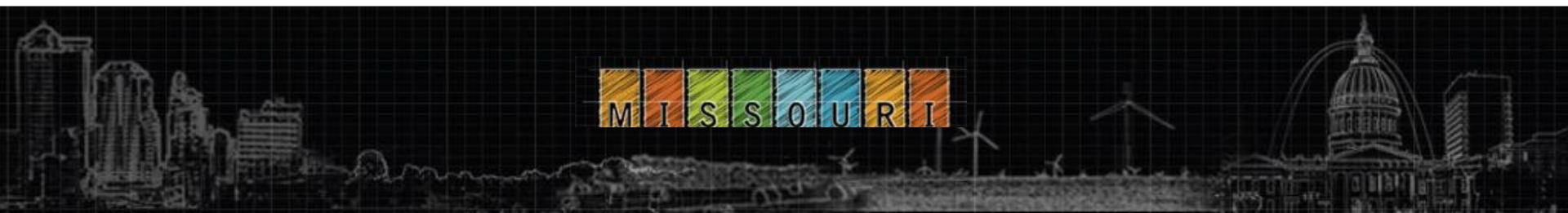
Brookings Institute



One of the most persistent challenges affecting both lagging and thriving state economies is the growing skills gap—the disparity between the skills companies need to drive growth and innovation versus the skills that actually exist within their organizations and in the labor market.

A sizable skills gap impacts other vital dimensions of the economy including exports and international trade, entrepreneurship, and technology, all critical drivers of national competitiveness and economic growth.

US Chamber Foundation, 2014



“Average is Over”

“In the past, workers with average skills, doing an average job, could earn an average lifestyle. Today, average is over. So many more employers have so much more access to so much more above average cheap foreign labor, cheap robotics, cheap software, cheap automation, and cheap genius. Therefore, everyone needs to **find their extra** – their unique contribution that makes them **stand out** in whatever is their field of employment.

Tyler Cowen, “Making It In America”

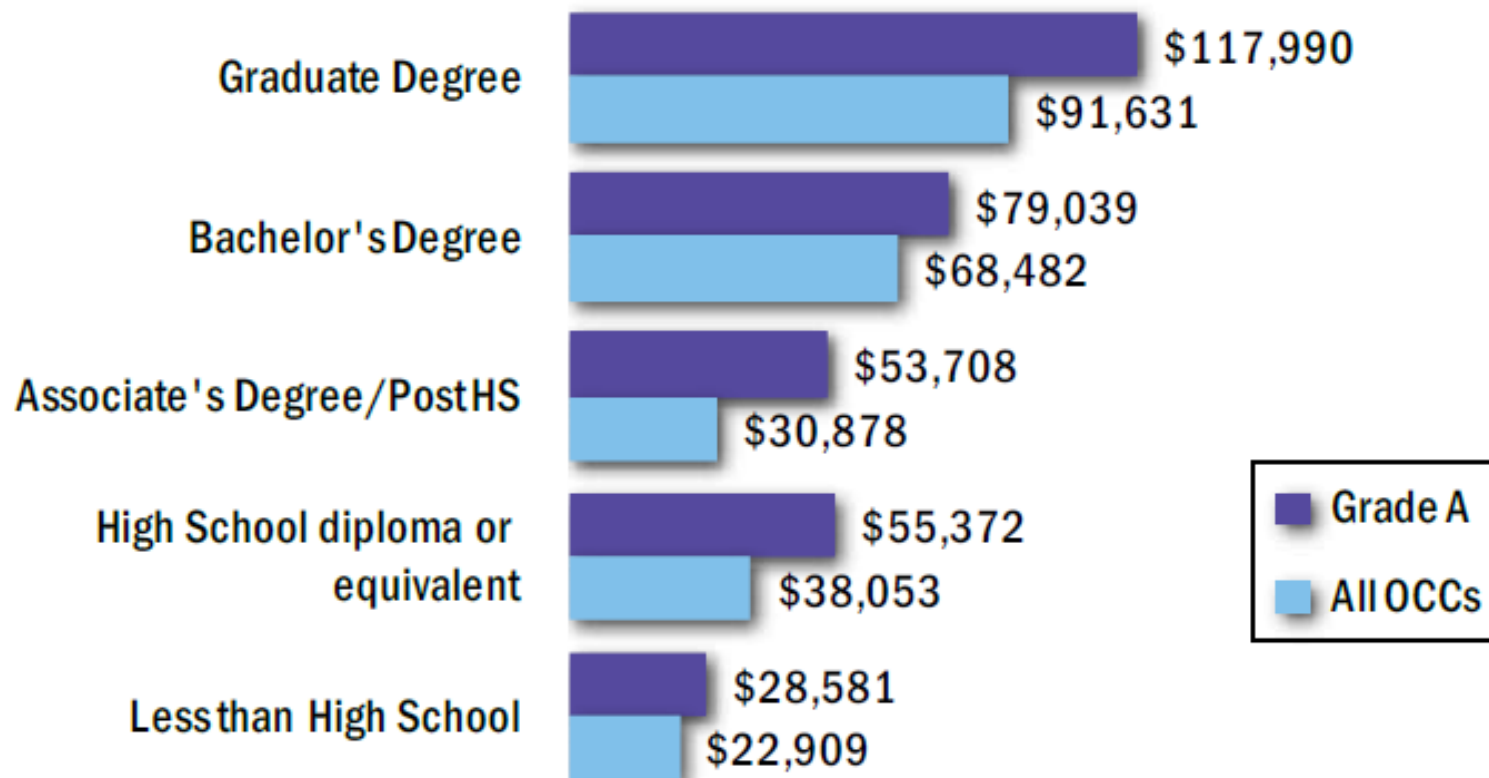




EMPLOYMENT DATA

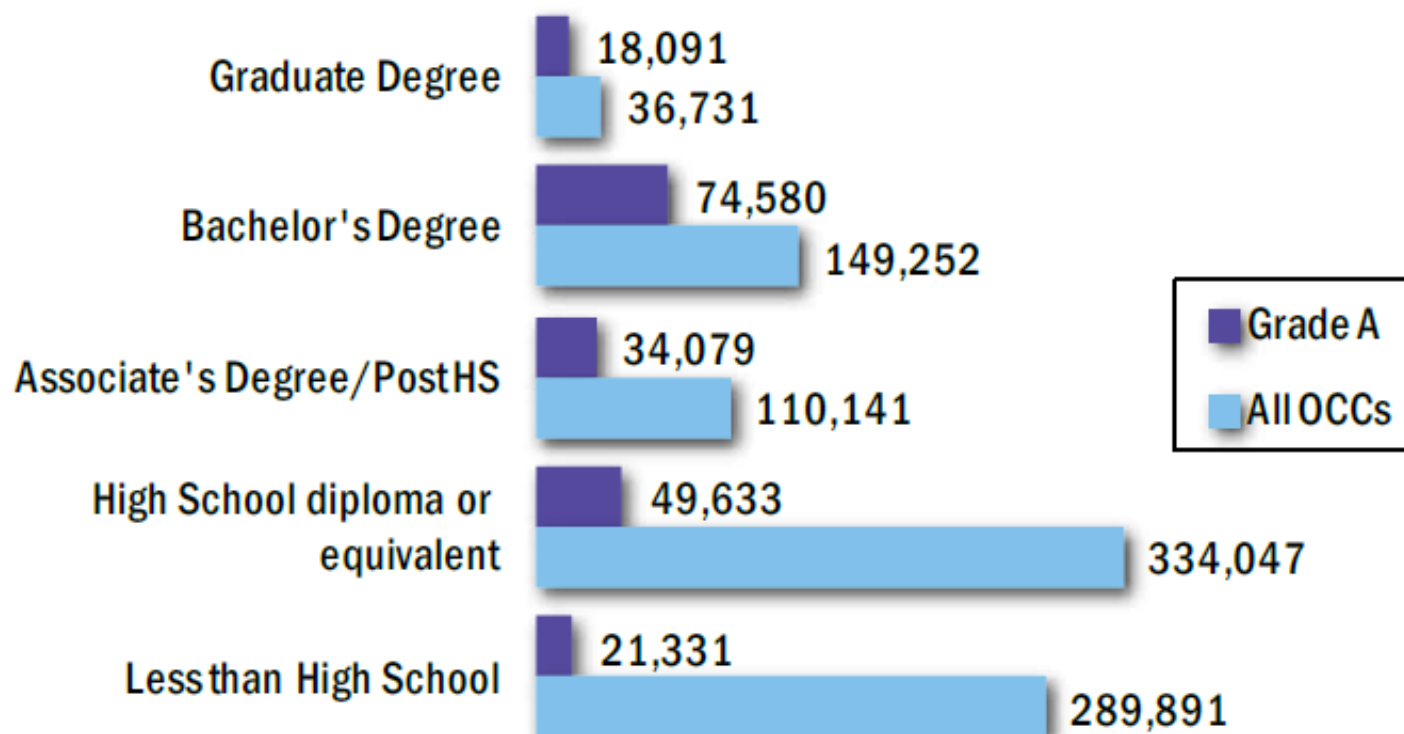


Average Annual Wage of Grade A Careers



M I S S O U R I

Total Openings for Grade A Careers



MISSOURI

Top Grade A Careers

Grade A occupations are projected to experience the greatest percentage of growth between 2012 and 2022. Some of these occupations were hard hit by the recession started in 2008, and are projected to experience a return to growth, while others are part of a growing industry such as healthcare. These occupations cover a wide range of career opportunities, and require short, medium and long term education and training.



NOW Occupations

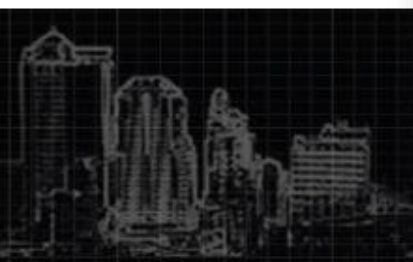
Title	Openings	Avg Wage
Personal Care Aides	11,318	\$19,398
Construction Laborers	7,617	\$41,129
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	7,551	\$60,638
Sales Representatives, Services, All Other	6,036	\$53,079
Medical Secretaries	5,823	\$30,801
Insurance Sales Agents	4,185	\$57,587
Painters, Construction and Maintenance	2,396	\$49,462

NEXT Occupations

Title	Openings	Avg Wage
Registered Nurses	21,004	\$58,037
Carpenters	7,097	\$49,187
Licensed Practical and Licensed Vocational Nurses	6,601	\$37,800
Managers, All Other	5,027	\$98,711
Computer User Support Specialists	4,452	\$47,667
Electricians	4,273	\$54,978
Plumbers, Pipefitters, and Steamfitters	2,806	\$60,324

LATER Occupations

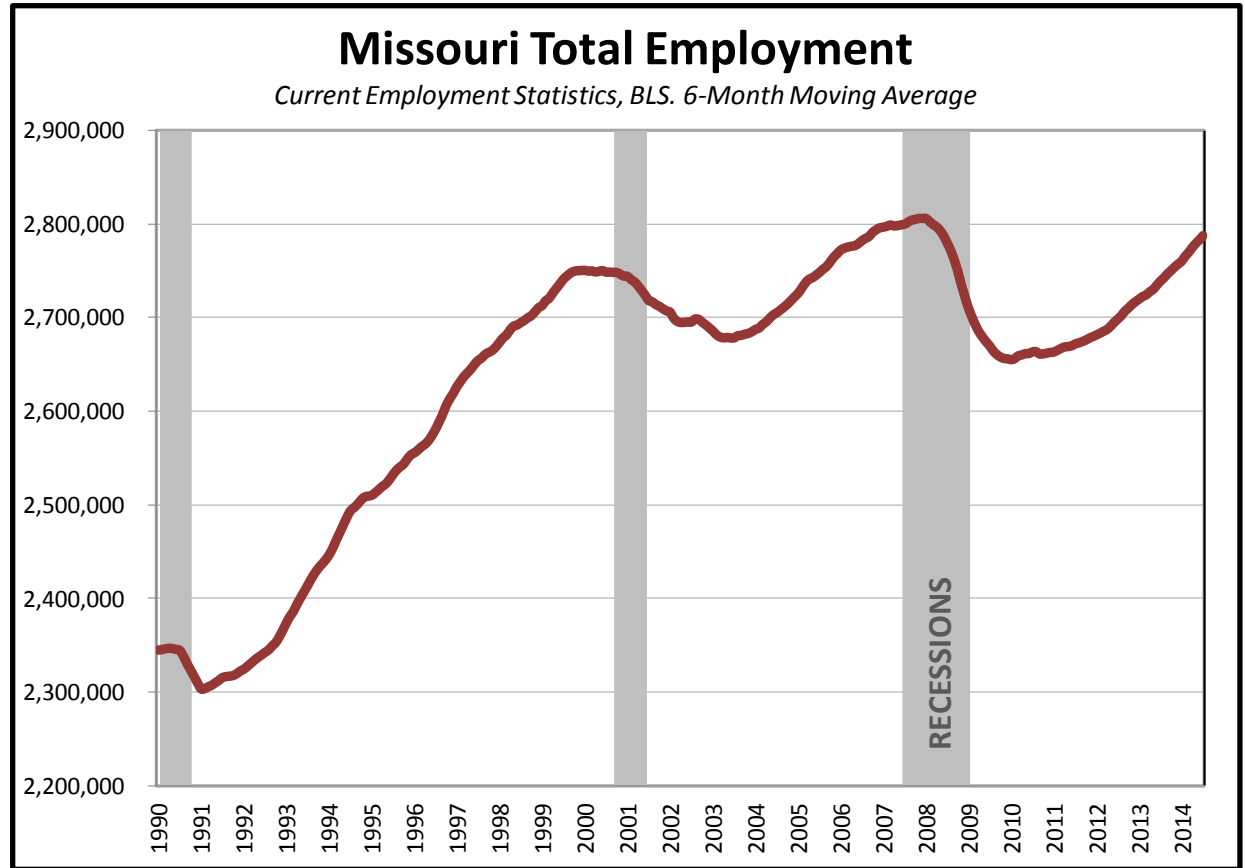
Title	Openings	Avg Wage
General and Operations Managers	15,031	\$91,952
Accountants and Auditors	10,935	\$65,144
Elementary School Teachers, Except Special Education	7,451	\$48,463
Middle School Teachers, Except Special and Career/Technical Education	4,491	\$53,377
Computer Systems Analysts	3,877	\$80,088
Lawyers	3,812	\$116,183
Software Developers, Applications	3,224	\$85,772



Employment Trends

Missouri is
reaching peak
employment
again in 2015.

CY 2014: Largest
1 year job
increase since
1997.



MISSOURI

MO Employment Growth by 2022

New Jobs will be created....

2012 Employment
2.84 Million

2022 Projected Employment
3.09 Million

Growth
255,000

But Replacement Jobs also needed....

New Job Openings
255,000

+

Replacement Jobs
665,000

=

Total Openings
920,000

2012-2022 Occupational Projections, MERIC . Occupations include payroll workers and the self-employed.

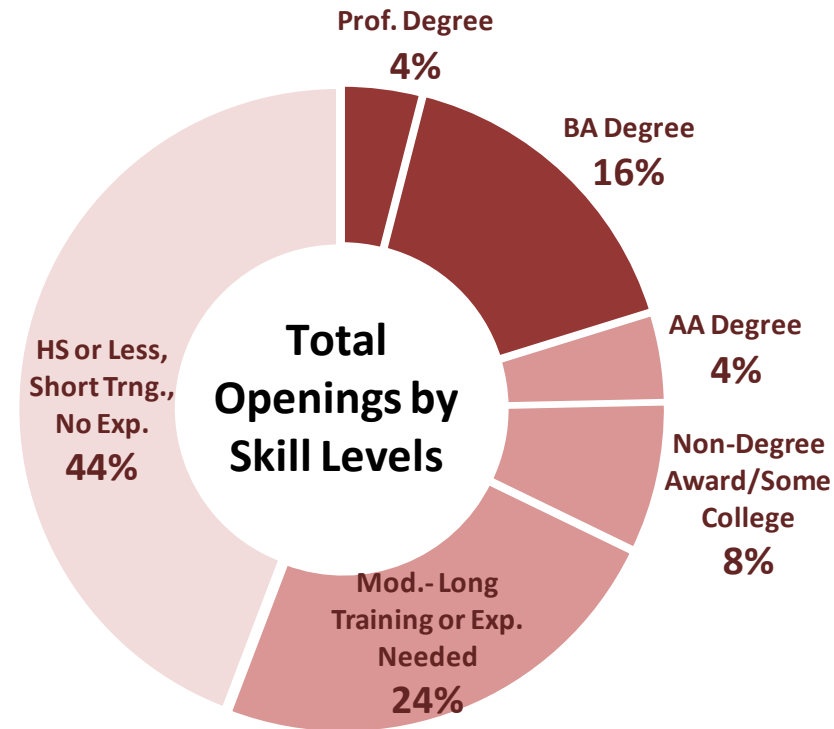
MISSOURI



Projected Employment Growth by 2022

920,000 Total Job Openings

Occupation	Total Openings	% of Total	Median Wage
High Skill	186,000	20%	\$66,000
Middle Skill	327,000	36%	\$35,100
Low Skill	407,000	44%	\$24,400
Total	920,000	100%	\$32,300



2012-2022 Occupational Projections, MERIC . 2013 median wage from Occupational Employment Statistics Program, MERIC.

MISSOURI

Annual Demand for Mid-High Skill Jobs

56% of Job Openings need Middle-to-High Skills

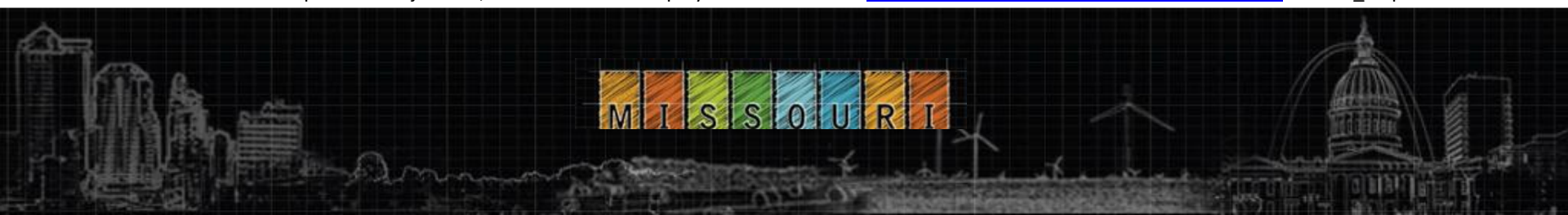
51,300 Annual Openings for Middle-to-High Skill Workers

Can Unemployed Meet the Need?

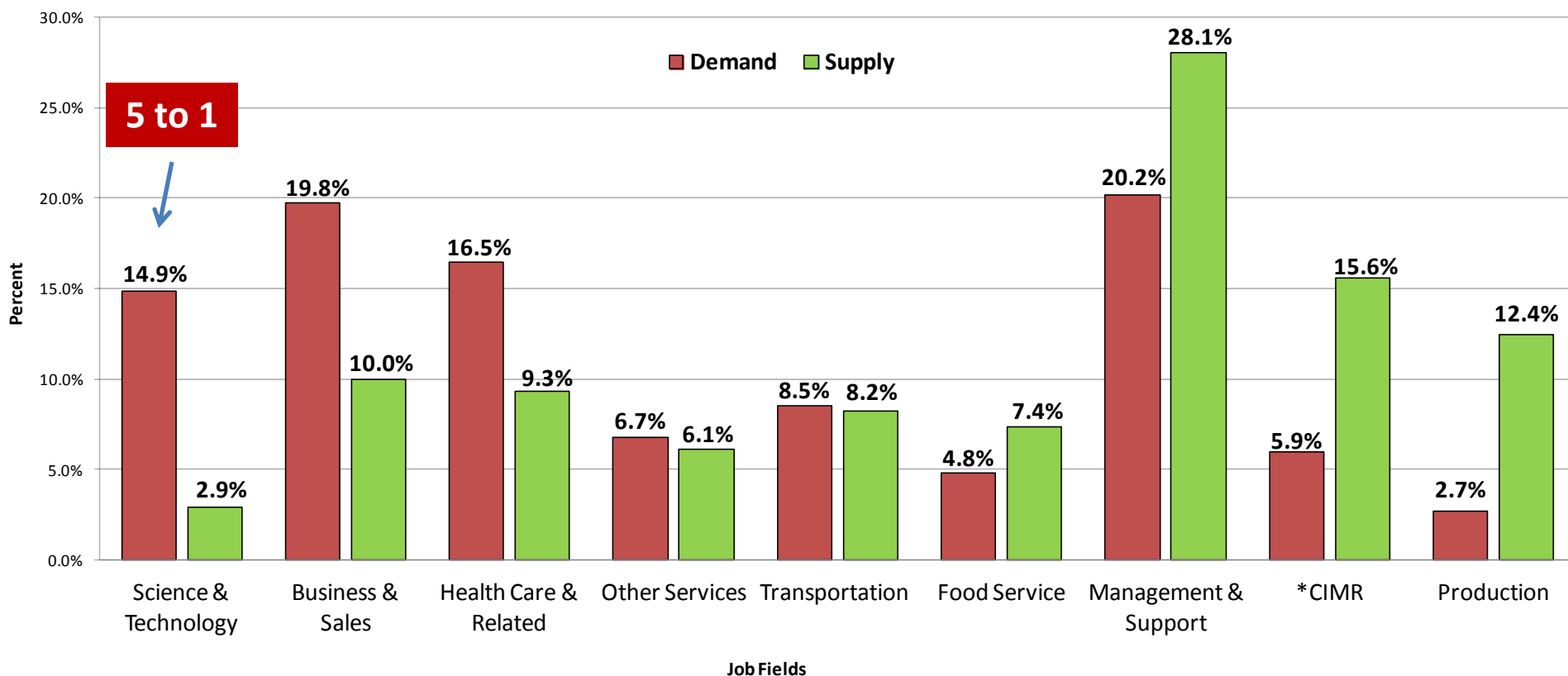
143,000 Unemployed (+25 Older) in 2013

- 77,000 (54%) have Some College or College Degrees
- Highest Rate of Unemployment in Construction
- **Some Yes, but Others need New Skills...**

2012-2022 Occupational Projections, MERIC . 2013 Unemployment information http://www.bls.gov/opub/gp/pdf/gp13_15.pdf. and 13_19.pdf



Missouri Labor Supply and Demand



In 2014 Too Few Jobseekers Chasing Opportunities in **STEM, Business, and Healthcare**

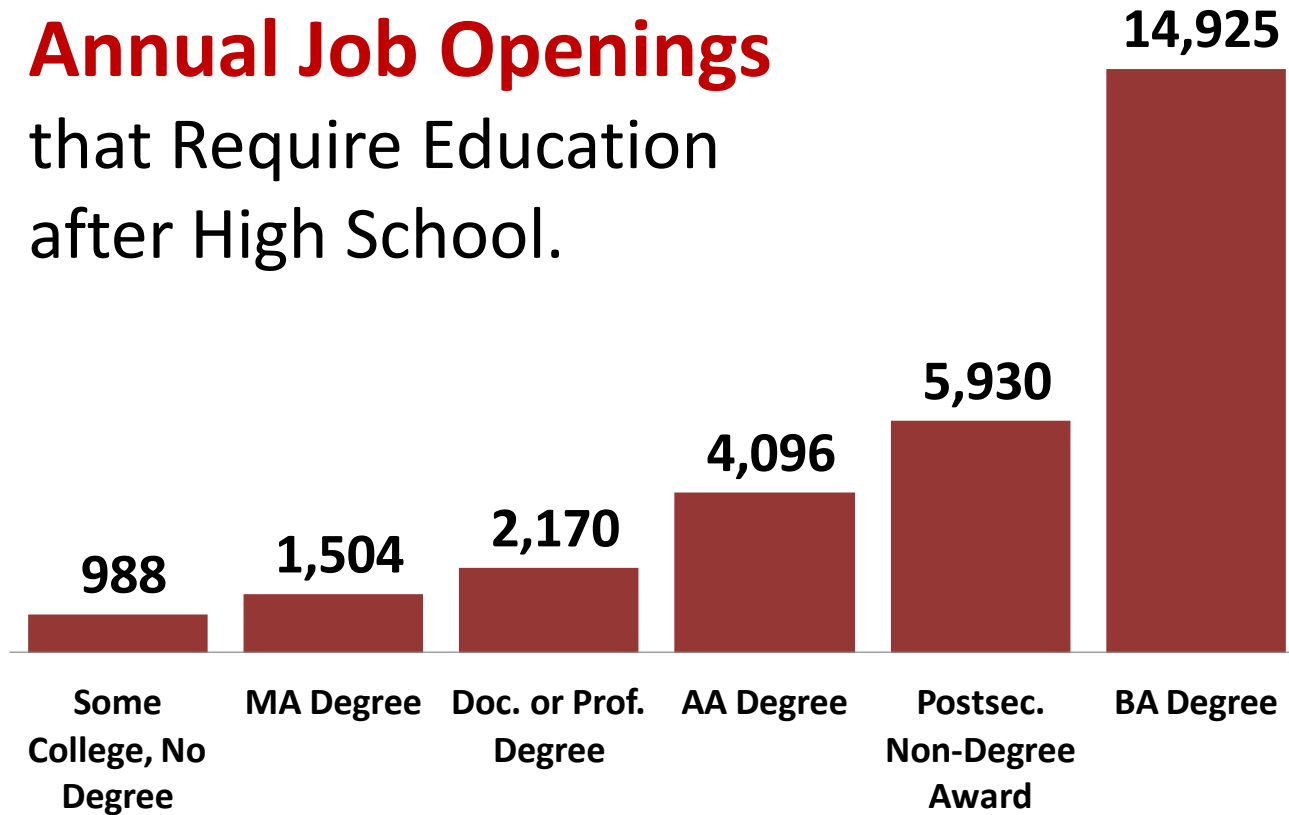
*Construction/Install./Maint. & Repair. Sources: Burning Glass Labor Insight, Online Job Ads Jan. 2014-Dec. 2014, Active Jobseekers, Dec. 2014, mo.jobs.gov.

MISSOURI

Jobs and Education

Annual Job Openings

that Require Education
after High School.



2012-2022 Occupational Projections, MERIC. Job openings include growth and replacement needs for an occupation.

MISSOURI



STEM

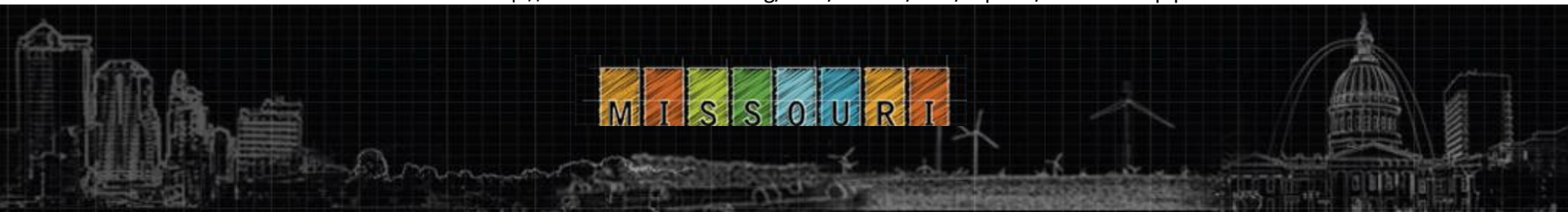


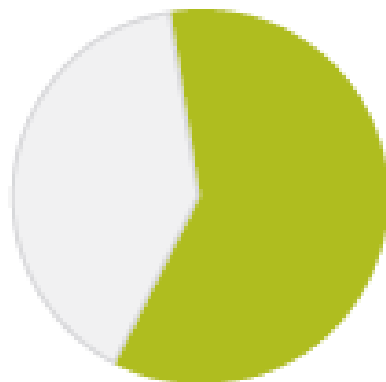
What are Businesses Saying?

Business Roundtable of U.S. Company C.E.O.s
126 Employers Surveyed in Fall 2014

- **60%** of Job Openings require **basic STEM literacy**
- **42%** of Job Openings require **advanced STEM knowledge**
- Biggest Gaps:
 - **Advanced Computer Skills**
 - **Quantitative Knowledge Skill**

Source: <http://businessroundtable.org/sites/default/files/reports/BRT-SkillGap.pdf>





60%
of new jobs in
the 21st century
will require STEM
skills possessed
by only



20%
of the current
workforce

Source: National
Commission on
Mathematics and
Science for the
Twenty-first
Century

MISSOURI

STEM SKILLS ARE IN DEMAND

In Missouri, STEM skills have stayed in demand even through the economic downturn.

STEM:

3.1 jobs for every
1 unemployed person



Non-STEM:

3.7 unemployed people for every **1 job**



Source:

<http://changetheequation.org/sites/default/files/vital-pdfs/MO-CTEq-vital-signs.pdf>

Why STEM Education Matters

1. STEM is where the jobs are.
 - STEM jobs will grow by 17 % over the next 10 years compared to 9.8% for non-stem.
2. STEM workers make higher salaries.
 - 26% more on average; Less likely to experience job loss.
3. Decline in STEM knowledge capital is reducing the basic scientific research that leads to growth.



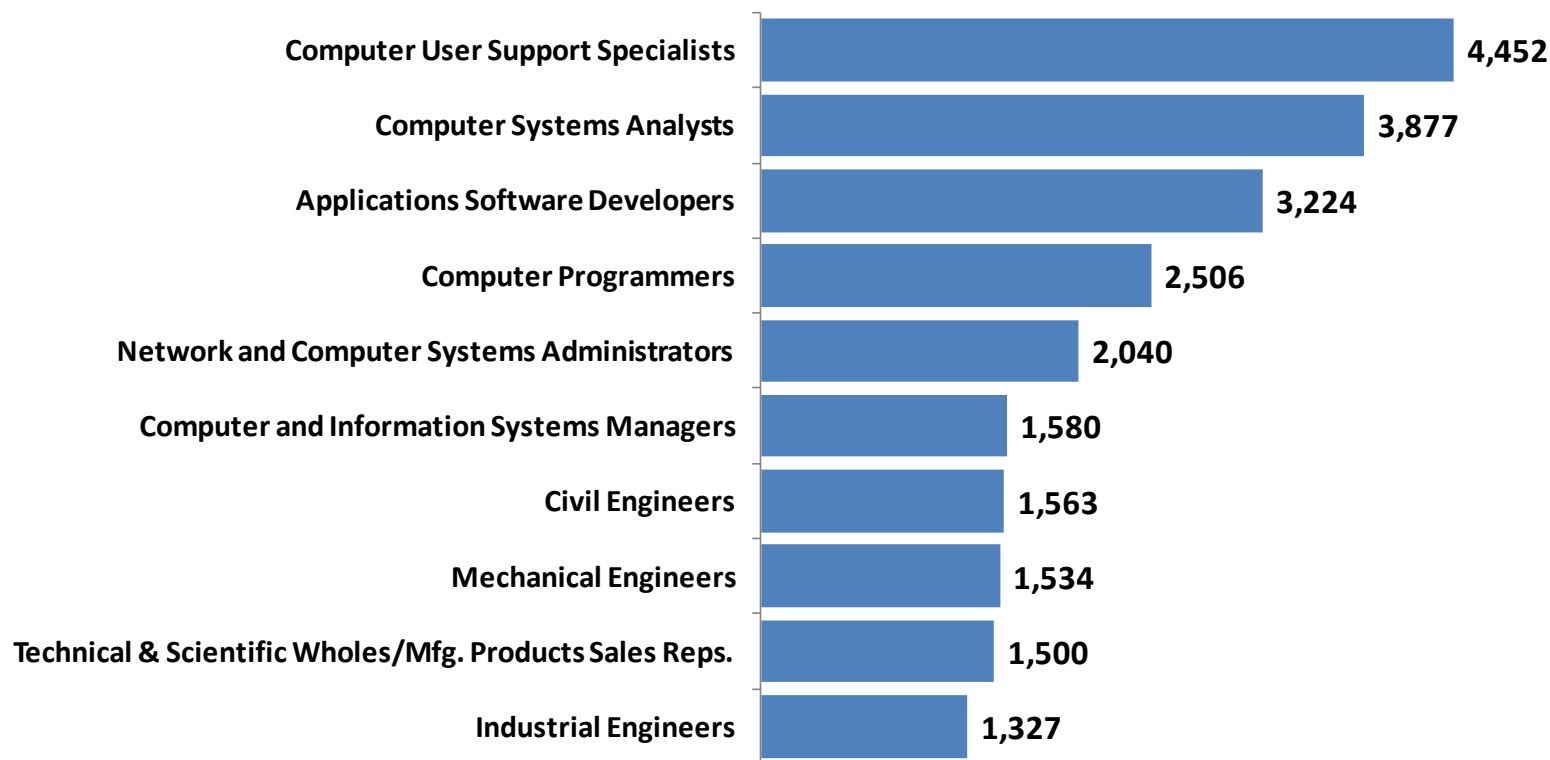
Why STEM Education Matters

4. United States is failing to produce enough skilled STEM workers.
 - **60%** of the new jobs that will open in the 21st century will require skills possessed by only **20%** of the current workforce.
 - U.S. may be short as many as **3 million** high-skills workers by 2018.
 - **2/3** of those jobs will require at least some post-secondary education.
 - American universities, however, only award about **1/3** of the bachelor's degrees in science and engineering as Asian universities.



Top Missouri STEM Job Openings 2012-2022

Technologists and Engineers Top List



2012-2022 STEM Occupational Projections, MERIC. http://www.missourieconomy.org/pdfs/stem_top_openings.pdf.

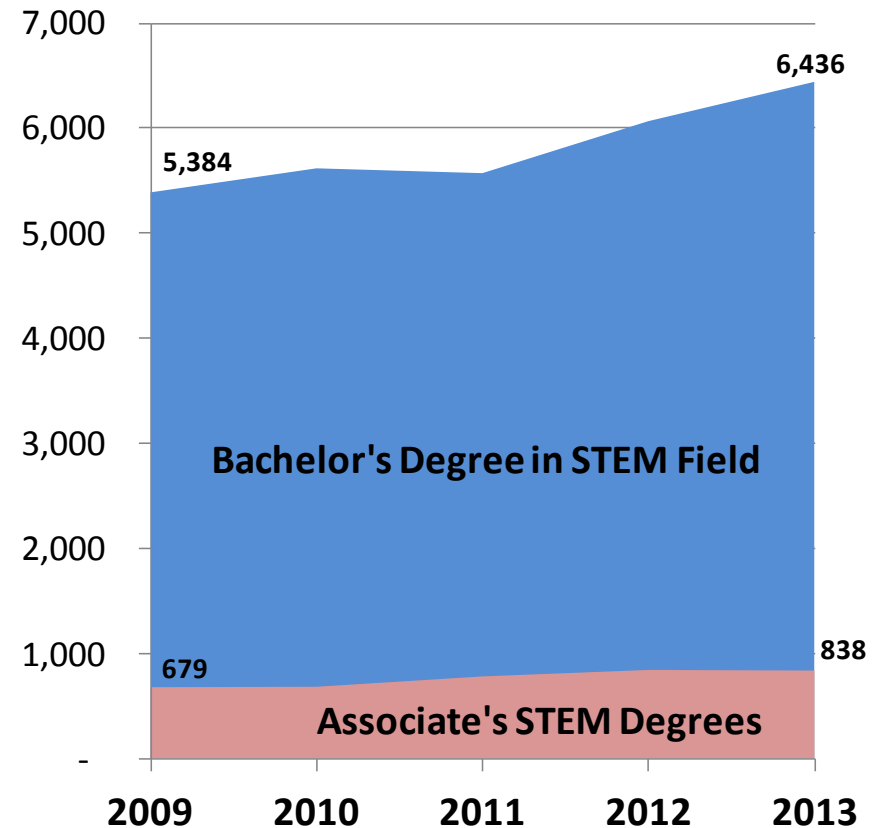
MISSOURI

Degrees in STEM Fields Trending Up

In 2013 Missouri STEM Degrees make up:

- **16% of Bachelor's Degrees**
- **6% of Associate's Degrees**

- **60%** of Job Openings require **basic STEM literacy**
- **42%** of Job Openings require **advanced STEM knowledge**



Source: IPEDS completion survey data. Completions in Engineering, Computer Science, Sci./Eng. Technology, Bio., Life, and Physical Science.

MISSOURI

Proposed Initiatives to produce more career-ready workers with good job prospects.

McKinsey Global Institute, “Game Changers: Opportunities for US Growth and Renewal”, July 2013

1. Expanding the number of **apprenticeships** and non-degree training programs that give workers marketable skills and credentials.
2. Concerted focus on improving learning and labor market outcomes (2 & 4 year degrees).
 - Better and more transparent information about career pathways and outcomes so that students can choose the most appropriate and effective programs.
3. Increase in graduates with **STEM** degrees.
4. Focus on attracting and retaining talent from around the world.





MO RESOURCES AND INITIATIVES

MISSOURI

Innovation Campuses

- Purpose/Benefit:
 - Increase the number of graduates in high-demand fields as identified by area employers.
 - Reduce the time and costs for graduation.
- Method: In HS junior year, students:
 - Hired as interns by the high-growth employers.
 - Take university and community college classes for credit.



Innovation Campuses

- Campus Locations:
 - Lees Summit (UCM), St. Joseph, Springfield, Jefferson City, St. Charles, Cape Girardeau, Rolla Kansas City, and Joplin.
 - \$9 million initial state grants (2012)
- \$1 million Grant (USA Funds, 2015) – Innovation Campus
 - Northland Center for Advanced Professional Studies (NW MO State, North KC)
 - UCM (Lees Summit)
 - MoState (Springfield)
- \$1 million Grant (USA Funds, 2015) – Competency Ed.
 - NW, Truman, UCM, MoState



Innovation Campus

- 2014 Legislation:
 - 50% tax credit for contributions to an Innovation Campus.
 - ** Innovation Campus must repay the amount of the tax credit.
 - Rules pending.



Workforce Training Resources

- “Missouri Works”:
 - Reimbursement of a portion of training for new jobs or upgrade of existing jobs.
 - Primary companies with above average wages.
 - New capital investment required.
 - Needed improvements:
 - Standardizing and improving the workforce services capacity of the Community Colleges.



ACT Work Keys / National Career Readiness Certificate (NCRC)

- Portable credential that demonstrates achievement and a certain level of workplace employability skills in:
 - Applied Mathematics
 - Locating Information, and
 - Reading for Information
- Measures "real world" skills that employers believe are critical to job success.



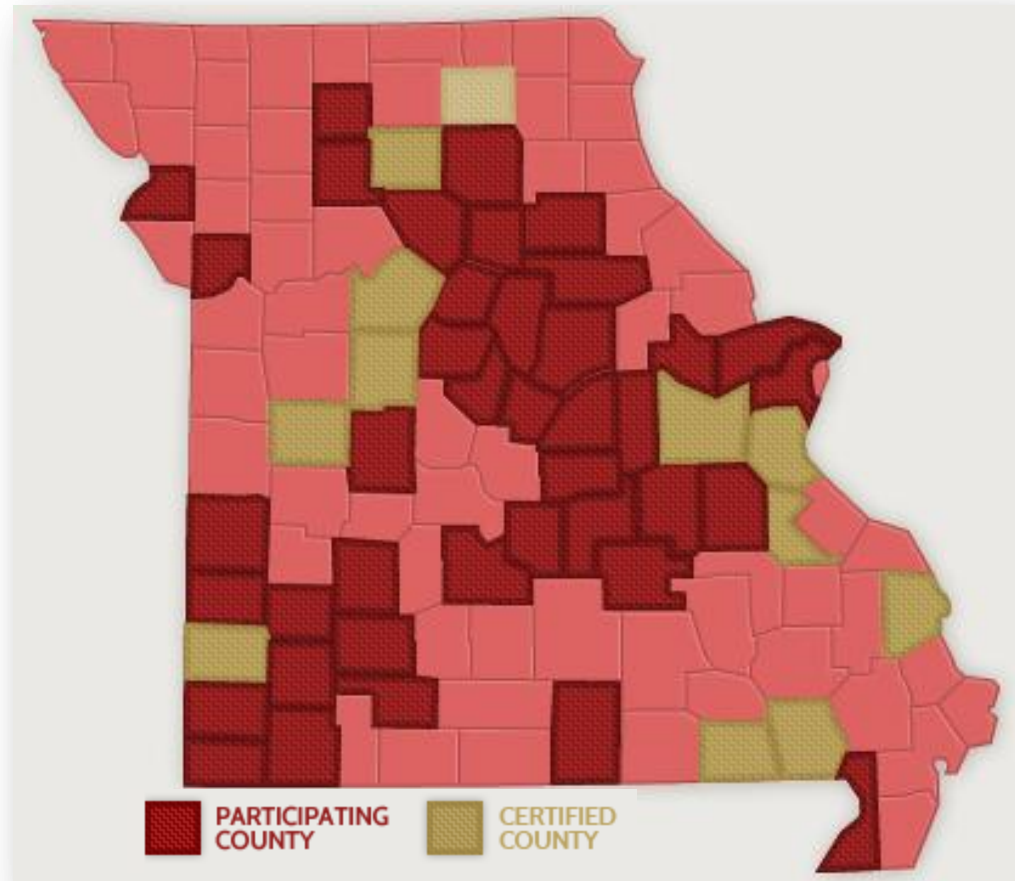
NCRC Benefits

- Efficient matching of talent with work:
 - Helps job seekers find better jobs.
 - Especially seekers w/o degrees or certificates.
 - Helps companies find skilled workers.
 - Reduces their risk in hiring.
- 52,863 NCRCs issued in Missouri
 - 5,379 Veterans
- 2,158 Employers pledged to use NCRCs



Certified Work Ready Communities

- Spin-off of NCRC
- Purpose:
 - Documents the skills of the county's workforce.
 - Encourages companies to use NCRC in hiring.
- 52 counties participating
 - 12 Fully Certified



MISSOURI

Recommendations (relative to NCRC)

- Require NCRC as an exit exam for Community College graduates.
 - Better markets skills.
- Allow 3 semester hour credits at CCs for NCRC.
 - Recommended by American Council on Education.
- Provide for uniform pricing by CCs for NCRC job profiling.





LOCATION OF HIGHER ED FACILITIES

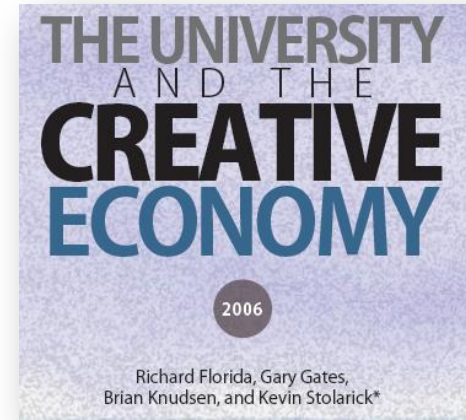


Impact of Location of Higher Ed Facilities

- Create the environment to attract and retain top talent, which will attract:
 - High-growth companies.
 - Top level entrepreneurs.
 - Support professional services and financial resources.
- This will cause:
 - New technologies.
 - Spin-off development and jobs.
 - Improved state and local tax base.



- “Recent movement in the U.S. and around the world is to make universities “**engines of innovation**,” and to enhance their ability to **commercialize their research**.”
- “3T’s” of University Economic Development:
 - **Technology**: Cutting edge of technological innovation.
 - **Talent**: attract faculty, researchers and students, while also acting as indirect magnets that encourage highly educated, talented and entrepreneurial people and firms to locate nearby.
 - **Tolerance**: Help shape an environment open to new ideas and diversity.



“Live First, Work Second,” consultant Rebecca Ryan notes just how important lifestyle is to next generation workers:

75% surveyed said that finding a “cool city” was more important to them than finding a “good job.”



MISSOURI

Innovation District Concept

- Purpose:
 - Attract/retain young tech/professional talent and tech/professional businesses and entrepreneurs.
- Method:
 - Mixed use development – residential, entertainment, office, arts, university, recreation (bikes, walking), public transit.
- Examples:
 - CORTEX, St. Louis (Wash U, SLU)
 - IDEA Commons, Springfield (MO State)
 - Kendall Square, Cambridge, Massachusetts (MIT, Harvard)
 - South Lake Union, Seattle
 - Research Triangle Park, North Carolina



Innovation Districts – Brookings Report

“Innovation districts constitute the ultimate mash up of entrepreneurs and educational institutions, start-ups and schools, mixed-use development and medical innovations, bike-sharing and bankable investments—all connected by transit, powered by clean energy, wired for digital technology, and fueled by caffeine.”

<http://www.brookings.edu/about/programs/metro/innovation-districts>





HIGHER ED & ECONOMIC DEVELOPMENT

MISSOURI